IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Dana Brad et al.	Confirmation No. 3667
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For:	Movable Barrier Operator With An Obstacle Detector	
Group Art Unit:	2624	
Examiner:	Claire X Wang	

APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Pursuant to 37 C.F.R. §41.37, the applicants hereby respectfully submit the following Brief in support of their appeal.

(1) Statement of Real Party in Interest

The real party in interest is The Chamberlain Group, Inc., a Connecticut corporation having a primary place of business in Elmhurst, Illinois.

(2) Statement of Related Cases

There are no prior or pending appeals, interferences, or judicial proceedings known to any inventor or practitioner (or anyone else substantively involved) who prepared or prosecuted the application that is related to, would directly affect, or would be directly affected by, or have a bearing on the Board's decision.

(3) Jurisdictional Statement

This Appeal Brief is submitted in support of an appeal filed under 35 U.S.C. § 134(a) from a final rejection dated October 4, 2007. The corresponding Notice of Appeal was filed on March 3, 2008. A Pre-Appeal request for Review was filed on March 3, 2008. A panel decision was mailed on November 17, 2008 informing the Applicant that the application remains under appeal. This Brief is being submitted on December 17, 2008.

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Court Decisions
None

Statutes
35 U.S.C. § 134 2
35 U.S.C. § 103(a) 4, 8, 9, 19

Other
MPEP 2141 11

(6) Status of Amendments

No amendments have been filed subsequent to the entry of the final rejection.

(7) Grounds of Rejection to be Reviewed

Claims 1-25 are currently pending and stand rejected. Claims 14-19 and 23-24 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,841,780 to Cofer in view of U.S. Patent No. 6,218,962 to Fiene. Claims 1-12 and 21-22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Published Application No. 2003/0118237 to Laird in view of Cofer and further in view of Fiene. Claim 13 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Laird in view of Cofer. Claims 20 and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cofer in view of Laird.

(8) Statement of Facts

Fact 1. The Examiner has rejected claims 14-19 and 23-24 as being an obvious combination of Cofer with Fiene (Office Action dated October 4, 2007 at page 3, lines 8-10).

Fact 2. The Examiner has found that Cofer teaches a system that projects and that produces a light pattern in a defined area (Office Action dated October

4, 2007 at page 3, lines 11-19).

Fact 3. The Examiner has found that Cofer does not teach that the light pattern is a single substantially straight line in the absence of an obstruction. However, the Examiner found that Fiene taught that the light source was a straight line. (Office Action dated October 4, 2007 at page 4, lines 1-9).

Fact 4. The Examiner concludes that "it would have been obvious for one ordinarily skilled in the art at the time the invention was made to combine Cofer's teaching of a pattern to detect intrusion in a garage system with Fiene's line-shaped pattern since [having] a light source that only display[s] a line pattern is well known." (Office Action dated October 4, 2007 at page 4, lines 1-9).

Fact 5. The Applicant disagrees with the Examiner's position and conclusions as set forth in Fact 4.

Fact 6. Cofer describes a system that detects the presence of objects in a monitored area. One or more complex patterns of light are projected onto the monitored area. Changes in the complex patterns are detected in the monitored area and these changes indicate the presence of an object in the monitored area. (Cofer, Abstract).

Fact 7. More specifically, Cofer teaches that a moire interference pattern

is projected onto the monitored area. The moire interference pattern may be created in several ways. For example, two complex patterns of light may be projected onto the same area. Additionally, one pattern may be projected onto the monitored area while another may be imposed by a pattern grating positioned in the image plane of an image capture device. Further, two images of the same pattern in the same area may be captured and rotated. (Cofer, FIGs. 5a-c and col. 2, lines 1-39).

Fact 8. The Fiene reference describes a system for helping a driver park their car in a garage at a specified location. Fiene is specifically not concerned with detecting the presence of an obstacle. As shown in FIG. 1 of Fiene, a line of light 24 is projected down from the operator 22. The driver knows from experience that when the line hits a particular spot on the car, the car is in the correct parked position. Fiene's use of the line of light does not and will not vary regardless of whether an obstacle is present or not. His light is provided to encourage the driver of the vehicle to park their car at a specified location (Fiene, FIG.1 and col. 3, lines 4450).

Fact 9. Claims 1-12 and 21-22 were rejected as being unpatentable over U.S. Published Application No. 2003/0118237 to Laird in view of Cofer and further in view of Fiene. (Office Action dated October 4, 2007 at page 6,

lines 1-2).

Fact 10. The Examiner has found that Laird teaches sensing when an optical pattern changes but does not teach that the pattern uses a light projection. However, the Examiner found that Cofer teaches the projection of light onto a monitored area. The Examiner found that it would have been obvious to combine Laird's system of object detection with Cofer's projecting patterns in order to have a system that is more sensitive to the presence and motions of three dimensional objects. (Office Action dated October 4, 2007 at page 6, lines 5-23).

Fact 11. The Examiner found that Laird and Cofer do not teach using a straight line as a light pattern. However, the Examiner found that Fiene teaches the use of a focused beam of light in the shape of a line and that "it would have been obvious to one ordinarily skilled in the art at the time the invention was made to combine Laird and Cofer's teaching of projecting a light pattern to detect intrusion in a garage system with Fiene's line-shaped pattern since hav[ing] a light source that only display[s] a line pattern is well known." (Office Action dated October 4, 2007 at page 7, lines 1-8).

Fact 12. The Applicant disagrees with the Examiner's conclusions set forth in Fact 11.

Fact 13. Laird uses a digital imaging device such as a CCD camera to protect an area from unauthorized intrusions. The digital imaging device views a predetermined pattern positioned across the area from the digital image device (e.g., a pattern on a wall). When an object enters the field of view, it interrupts the viewing of and obscures the recognizable pattern. The digital image device detects when this situation occurs and an alarm can be initiated. (Laird, paragraph 11). No light line is produced or used in the Laird system.

Fact 14. As mentioned above with respect to Fact 7, Cofer teaches that a moire interference pattern is projected onto the monitored area. No light line is used in the Cofer system.

Fact 15. As mentioned above with respect to Fact 8, the Fiene reference describes a system for helping a driver park their car in a garage at a specified location by projecting a line of light down from an operator. The driver knows from experience that when the line hits a particular spot on the car, the car is in the correct parked position. No obstacle detection is provided in the Fiene system.

Fact 16. Claim 13 depends directly upon claim 1 and was rejected under 35 U.S.C. § 103(a) as being unpatentable over Laird in view of Cofer. (Office Action dated October 4, 2007 at page 10, lines 1-2).

Fact 17. The Applicant disagrees with the Examiner's conclusions set forth in Fact 16.

Fact 18. Claim 13 depends upon claim 1. Because of this dependence, claim 13 also requires that the light pattern be a substantially straight line in the absence of an obstruction.

Fact 19. Claim 20 depends directly upon independent claim 18. Claim 25 depends directly upon independent claim 23. Claims 20 and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cofer in view of Laird. (Office Action dated October 4, 2007 at page 11, lines 1-2).

Fact 20. The Applicant disagrees with the Examiner's conclusions set forth in Fact 19.

Fact 21. As mentioned, claim 20 depends upon claim 18 and claim 25 depends upon claim 23. Because of this dependence, claims 20 and 25 require that the light pattern be a substantially straight line in the absence of an obstruction. (See claim 18.)

(9) Argument

Errors in the Rejections of Claims 14-19 and 23-24 over Cofer and Fiene

Claim 14

On page 3, lines 8-10 of the Final Rejection, the Examiner asserted that

claims 14-19 and 23-24 were obvious over the combination of Cofer and Fiene. This assertion represents an error because the Fiene reference teaches against the proposed combination.

More specifically, Fiene teaches that the line of light must be projected for only a short period of time when the driver parks the car. Fiene, col. 5, lines 4-8. In fact, Fiene teaches that the line of light 24 only is turned on with a courtesy light (as also comprises a part of the operator) or only when the operator is activated by the remote transmitter. Fiene, col. 3, lines 36-38. Consequently, obstruction detection—if it were provided at all-- is not and can not be provided at all other times, which would amount to the vast majority of the day.

Furthermore, the Fiene system does not project the light if operated from a push button wall control. Fiene, col. 5, lines 9-16. Fiene specifically teaches that the line of light is not projected at these times since children are likely present in the garage and it is desired to avoid children looking at the light. Consequently, the system does not provide obstruction detection (and needed safety protection) during these time periods, which are likely very substantial in length.

It is not proper to combine references if there is a teaching against the

proposed combination or modification. See MPEP 2141. In the present case, Fiene teaches away from using the line of light in an obstruction detection system as claimed for at least the reasons noted. For this reason, the Applicant asserts that Fiene and Cofer can not be properly combined and that claim 14 is not rendered obvious over the proposed combination. Instead, the Applicants respectfully submit that a fair combination of Cofer with Fiene will yield a system that employs Cofer's complicated light patterns for a first purpose of detecting obstacles and Fiene's line of light for a second purpose of directing a driver to a proper parking location; this combined result is very different from that which the Applicants present in claim 14 and one can only achieve the claimed result by employing the Applicants' own teachings, using impermissible hindsight, to effect a selective picking and choosing amongst the teachings of two references.

Claims 18 and 23

Independent claims 18 and 23 have recitations similar to claim 14 and it is asserted that these claims are allowable for the same reasons as claim 14.

Claims 15-17, 19, and 24

Claims 15-17 depend upon claim 14, claim 19 depends upon claim 18, and claim 24 depends upon claim 23. Since claims 14, 18, and 23 have been

shown to be allowable, it is asserted that these dependent claims are also allowable.

A version of these arguments was made to the Examiner in a communication filed March 3, 2008 (page 2, line 12- page 4, line 5).

Errors in the Rejections of Claims 1-12 and 21-22 over Laird, Cofer, and Fiene

At page 6, lines 1-2 of the Final Rejection, the Examiner asserted that the combination of Laird, Cofer, and Fiene rendered claims 1-12 and 21-22 obvious. This assertion represents an error because the Fiene reference teaches against the proposed combination.

Claims 1, 21 and 22

Independent claims 1, 21, and 22 have recitations similar to claim 14 and were rejected over the Laird, Cofer, and Fiene combination. The Cofer and Fiene references have been discussed above. Laird corrects none of the deficiencies of Cofer or Fiene. More specifically, Laird does not teach or suggest the projection of a single straight line of light as recited in claims 1, 21, and 23, much less the projection of a substantially straight line in the absence of an obstruction. In fact, because there is no image projection device, nothing can be projected in Laird. In addition, Laird does not teach or suggest determining when the single straight line of line changes as is also

recited in claim 1. For these reasons, the Applicants assert that claims 1, 21, and 23 are allowable for the same reasons as claim 14.

Claims 2-12

Claims 2-12 depend upon claim 1, which has been shown to be allowable for the reasons stated above. Consequently, the Applicants assert that claims 2-12 are allowable for the same reasons as given above with respect to claim 1.

A version of these arguments was made to the Examiner in a communication filed March 3, 2008 (page 4, lines 7-18).

Error in the Rejection of Claim 13 over Laird and Cofer

Claim 13

On page 10, lines 1-2 of the Final Rejection, the Examiner asserted that claim 13 was rendered obvious by the combination of Laird and Cofer. This assertion represents an error because neither Laird nor Cofer teach or suggest a line of light as recited in claim 13.

Because of its dependence on claim 1, claim 13 recites the projection of a straight line in the absence of an obstruction. However, for the reasons stated above, neither Laird nor Cofer teach or suggest the projection of a straight line in the absence of an obstruction.

Consequently, the Applicants assert that claim 13 is allowable over the

proposed combination.

A version of this argument was made to the Examiner in a communication filed March 3, 2008 (page 4, lines 20-24).

Errors in the Rejections of Claims 20 and 25 over Cofer in view of Laird

Claims 20 and 25

On page 11, lines 1-2 of the Final Rejection, the Examiner asserted that claims 20 and 25 were rendered obvious by the combination of Cofer and Laird. This assertion represents an error because neither Cofer nor Laird teach or suggest the projection of a line of light.

Because of their dependency on claims 18 and 23, claims 20 and 25 recite the projection of a line that is straight in the absence of an obstruction. However, for the reasons stated above, neither Laird nor Cofer teach or suggest the projection of a straight line in the absence of an obstruction. Consequently, the Applicants assert that claims 20 and 25 are allowable for the same reasons as given above with respect to claim 18.

A version of this argument was made to the Examiner in a communication filed March 3, 2008 (page 5, lines 2-7).

Respectfully submitted,

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(10) Appendix

(10A) Claims Section

1. (Rejected) A barrier operator for moving a barrier between open and closed positions with respect to a barrier opening, comprising:

a light pattern generator to project an optical pattern across the barrier opening, the light pattern being a single substantially straight line in the absence of an obstruction;

an imaging device to observe a portion of the barrier opening as illuminated by the optical pattern; and

a controller coupled to the imaging device to sense when the observed single substantially straight line in the observed portion of the barrier opening changes from a single substantially straight line, and generating a detection signal in response thereto.

2. (Rejected) The barrier operator of claim 1, comprising apparatus for periodically recording images detected by the imaging device.

3. (Rejected) The barrier operator of claim 2, wherein the controller periodically compares an observed pattern detected by the imaging device with a digital representation of a non-obstacle pattern previously detected and recorded.

4. (Rejected) The barrier operator of claim 3, wherein the non-obstacle pattern is a substantially straight line.

5. (Rejected) The barrier operator of claim 1, wherein the digital imaging device observes the barrier path at an angle to the scanning device.

6. (Rejected) The barrier operator of claim 1, comprising an alarm device to generate an alarm indication in response to the detection signal.

7. (Rejected) The barrier operator of claim 6, wherein the alarm indication is an audible signal.

8. (Rejected) The barrier operator of claim 6 wherein the alarm indication is a visual signal.

9. (Rejected) The barrier operator of claim 1, comprising a barrier drive unit for moving the barrier, and wherein the controller is responsive to the detection signal to control the barrier drive.

10. (Rejected) The barrier operator of claim 1, wherein the light pattern generator comprises:

a source of electrical energy;

a laser diode; and

an optical lens to focus a beam generated by the laser diode.

11. (Rejected) The barrier operator of claim 1, wherein the imaging device is a CCD camera.

12. (Rejected) The barrier of claim 1, wherein the light pattern generator is disposed on the barrier.

13. (Rejected) The barrier operator of claim 1, comprising a head unit with a motor for moving the barrier, and the imaging device is disposed on the head unit.

14. (Rejected) A system for detecting an object, comprising:

a light pattern generator projecting a light pattern beam across a defined area and producing a light pattern in the defined area, the light pattern being a single substantially straight line in the absence of an obstruction;

a digital imaging device for detecting the light pattern produced by the light pattern generator;

a controller having a memory with a stored image of a non-obstruction pattern detected in the defined area as produced by the light pattern generator; and

the controller periodically compares said image stored in the memory with the observed single substantially straight line detected by the imaging device produced by the light beam shining across the defined area and recorded

by the digital imaging device and determines when the observed single substantially straight line changes from a single substantially straight line.

15. (Rejected) The system of claim 14, wherein, when the controller detects a difference between the digital representation of the light pattern produced by detecting the defined area and the image stored in a memory, the controller initiates an alarm.

16. (Rejected) The system of claim 14, wherein the image stored in the memory is of a substantially straight line produced by the pattern generator in the absence of an object in the defined area.

17. (Rejected) The system of claim 16, wherein the digital imaging device is a CCD camera, which is installed at an off-set angle from the laser device.

18. (Rejected) A method of detecting an object in a defined area using a light pattern generator and a digital imaging device, comprising steps of:

projecting a beam from the light pattern generator across the defined area and producing an optical pattern, the optical pattern being a single substantially straight line in the absence of an obstruction;

observing with a digital imaging device the optical pattern at an off-set angle to the projected beam;

storing in a memory an image of a non-obstruction pattern produced by projecting the pattern across the defined area in absence of an obstacle;

detecting by the digital imaging device a present optical pattern;

periodically comparing the single substantially observed straight line with the stored image;

producing a control signal when the observed single substantially straight line changes from a single substantially straight line pattern-stored in the memory as a result of an obstruction in the defined area.

19. (Rejected) The method of claim 18, comprising generating an alarm signal responsive to the control signal.

20. (Rejected) The method of claim 18, comprising controlling a movement of a barrier in the defined area in response to the control signal.

21. (Rejected) A barrier operator for moving a barrier along a barrier path between open and closed positions comprising:

a light pattern generator to project an optical beam across the barrier path to produce a single substantially straight line in the absence of an obstruction;

an imaging device to observe the barrier path as illuminated by the optical beam; and

a controller coupled to the imaging device to sense an obstacle

illuminated by the optical beam when the observed single substantially straight line changes.

22. (Rejected) A barrier operator for moving a barrier between open and closed positions with respect to a barrier opening comprising:

a light pattern generator to project an optical beam across the barrier path to produce a single substantially straight line in the absence of an obstruction, said light pattern generator having the ability to be enabled and disabled;

an imaging device to observe the barrier opening;

a controller coupled to the imaging device to detect an enabled image of the barrier opening while the light pattern generator is enabled and to detect a disabled image of the barrier opening while the light pattern generator is disabled and generating a detection signal in response to the enabled and disabled images.

23. (Rejected) A method of detecting an object in a defined area using a light pattern generator and a digital imaging device, comprising steps of:

projecting a beam from the light pattern generator across the defined area to produce a single substantially straight line in the absence of an obstruction;

observing with a digital imaging device an optical illumination in the defined area;

storing in a memory an image of a non-obstruction optical illumination produced by projecting the pattern across the defined area in absence of an obstacle;

detecting by the digital imaging device a present optical illumination pattern;

periodically comparing the present optical illumination pattern with the stored image; and

producing a control signal when the observed single substantially straight line differs from a single substantially straight line stored image in the memory as a result of an obstruction in the defined area.

24. (Rejected) The method of claim 23, comprising generating an alarm signal responsive to the control signal.

25. (Rejected) The method of claim 23, comprising controlling a movement of a barrier in the defined area in response to the control signal.

(10B) Claim Support and Drawing

1. A barrier operator for moving a barrier between open and closed positions with respect to a barrier opening **{page 7, lines 32-34}**, comprising:

a light pattern generator to project an optical pattern across the barrier opening, **{FIG. 1, element 10, page 4, lines 8-12}** the light pattern being a single substantially straight line in the absence of an obstruction **{FIG 2, element 15 and page 5, lines 7-10}**;

an imaging device to observe a portion of the barrier opening as illuminated by the optical pattern **{FIG. 1, element 30 and page 4, lines 28-34}**; and

a controller coupled to the imaging device to sense when the observed single substantially straight line in the observed portion of the barrier opening changes from a single substantially straight line, and generating a detection signal in response thereto**{FIG. 1, within element 32, page 2, line 33- page 3, line 2 and page 5, lines 15-17}**.

13. The barrier operator of claim 1, comprising a head unit with a motor for moving the barrier, and the imaging device is disposed on the head unit **{FIG. 1, element 32, page 4, lines 12-17}**.

14. A system for detecting an object, comprising:

a light pattern generator projecting a light pattern beam across a defined area and producing a light pattern in the defined area, {FIG. 1, element 10, page 4, lines 8-12} the light pattern being a single substantially straight line in the absence of an obstruction **{FIG 2, element 15 and page 5, lines 7-10}**;

a digital imaging device for detecting the light pattern produced by the light pattern generator **{FIG. 1, element 30 and page 4, lines 28-34}**;

a controller having a memory with a stored image of a non-obstruction pattern detected in the defined area as produced by the light pattern generator **{FIG. 1, within element 32, page 2, line 33- page 3, line 2 and page 5, lines 15-17}**; and

the controller periodically compares said image stored in the memory with the observed single substantially straight line detected by the imaging device produced by the light beam shining across the defined area and recorded by the digital imaging device and determines when the observed single substantially straight line changes from a single substantially straight line **{page 2, line 33- page 3, line 2}**.

18. A method of detecting an object in a defined area using a light pattern generator **{FIG. 1, element 10, page 4, lines 8-12}** and a digital imaging device

{FIG. 1, element 30 and page 4, lines 28-34}, comprising steps of:

projecting a beam from the light pattern generator across the defined area and producing an optical pattern, **{FIG. 1, element 10, page 4, lines 8-12}** the optical pattern being a single substantially straight line in the absence of an obstruction **{FIG 2, element 15 and page 5, lines 7-10}**;

observing with a digital imaging device the optical pattern at an off-set angle to the projected beam **{FIG. 1, element 30 and page 4, lines 28-34}**;

storing in a memory an image of a non-obstruction pattern produced by projecting the pattern across the defined area in absence of an obstacle **{page 2, line 34- page 3, line 13, page 7, lines 5-11}**;

detecting by the digital imaging device a present optical pattern **{page 3, lines 14-21}**;

periodically comparing the single substantially observed straight line with the stored image **{page 2, line 33- page 3, line 2}**;

producing a control signal when the observed single substantially straight line changes from a single substantially straight line pattern-stored in the memory as a result of an obstruction in the defined area **{page 3, lines 25-35}**.

20. The method of claim 18, comprising controlling a movement of a barrier in the defined area in response to the control signal **{page 7, lines 32-**

34}.

21. A barrier operator for moving a barrier along a barrier path between open and closed positions **{page 7, lines 32-34}** comprising:

a light pattern generator to project an optical beam across the barrier path **{FIG. 1, element 10, page 4, lines 8-12}** to produce a single substantially straight line in the absence of an obstruction**{FIG 2, element 15 and page 5, lines 7-10}**;

an imaging device to observe the barrier path as illuminated by the optical beam **{FIG. 1, element 30 and page 4, lines 28-34}**; and

a controller coupled to the imaging device to sense an obstacle illuminated by the optical beam when the observed single substantially straight line changes **{page 2, line 33- page 3, line 2}**.

22. A barrier operator for moving a barrier between open and closed positions with respect to a barrier opening **{page 7, lines 32- 34}** comprising:

a light pattern generator to project an optical beam across the barrier path **{FIG. 1, element 10, page 4, lines 8-12}** to produce a single substantially straight line in the absence of an obstruction**{FIG 2, element 15 and page 5, lines 7-10}**, said light pattern generator having the ability to be enabled and disabled;

an imaging device to observe the barrier opening **{FIG. 1, element 30 and page 4, lines 28-34}**;

a controller coupled to the imaging device to detect an enabled image of the barrier opening while the light pattern generator is enabled and to detect a disabled image of the barrier opening while the light pattern generator is disabled and generating a detection signal in response to the enabled and disabled images **{FIG. 1, within element 32, page 2, line 33- page 3, line 2 and page 5, lines 15-17}**.

23. A method of detecting an object in a defined area using a light pattern generator **{FIG. 1, element 10, page 4, lines 8-12}** and a digital imaging device **{FIG. 1, element 30 and page 4, lines 28-34}**, comprising steps of:

projecting a beam from the light pattern generator across the defined area **{FIG. 1, element 10, page 4, lines 8-12}** to produce a single substantially straight line in the absence of an obstruction **{FIG 2, element 15 and page 5, lines 7-10}**;

observing with a digital imaging device an optical illumination in the defined area **{FIG. 1, element 30 and page 4, lines 28-34}**;

storing in a memory an image of a non-obstruction optical illumination produced by projecting the pattern across the defined area in absence of an

obstacle **{page 2, line 34- page 3, line 13, page 7, lines 5-11}**;

detecting by the digital imaging device a present optical illumination pattern **{page 3, lines 14-21}**;

periodically comparing the present optical illumination pattern with the stored image **{page 2, line 33- page 3, line 2}**; and

producing a control signal when the observed single substantially straight line differs from a single substantially straight line stored image in the memory as a result of an obstruction in the defined area **{page 3, lines 25-35}**.

25. The method of claim 23, comprising controlling a movement of a barrier in the defined area in response to the control signal **{page 7, lines 32-34}**.

(10C) Means or Step Plus Function

None

(10D)	**Evidence Section**	
(10Di)	Contents of Evidence Section	
10Dii	Affidavits and declarations	None
10Diii	Other evidence filed prior to the notice of appeal	None
10Dvi	Other evidence filed after the notice of appeal	None

(10E) Related Cases Section

None